PERU

65th Peru ranks 65th among the 132 economies featured in the GII 2022.

The Global Innovation Index (GII) ranks world economies according to their innovation capabilities. Consisting of roughly 80 indicators, grouped into innovation inputs and outputs, the GII aims to capture the multi-dimensional facets of innovation.

The following table shows the rankings of Peru over the past three years, noting that data availability and changes to the GII model framework influence year-on-year comparisons of the GII rankings. The statistical confidence interval for the ranking of Peru in the GII 2022 is between ranks 63 and 77.

Rankings for Peru (2020–2022)

GIIYR	GII	Innovation inputs	Innovation outputs
2020	76	55	98
2021	70	52	82
2022	65	52	81

- Peru performs better in innovation inputs than innovation outputs in 2022.
- This year Peru ranks 52nd in innovation inputs, the same as last year but higher than 2020.
- As for innovation outputs, Peru ranks 81st. This position is higher than both 2021 and 2020.

16th Peru ranks 16th among the 36 upper-middle-income group economies.

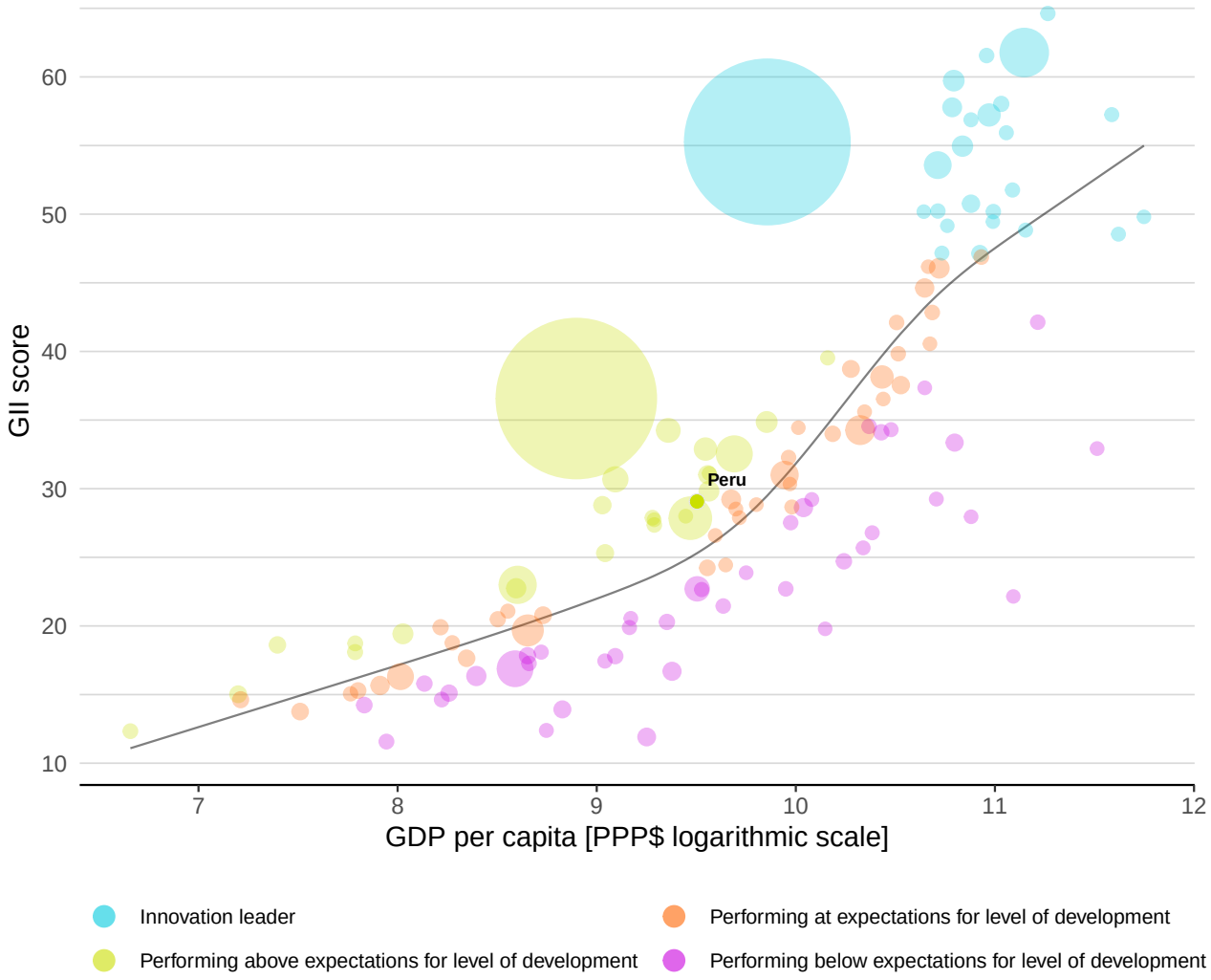
6th Peru ranks 6th among the 18 economies in Latin America and the Caribbean.

EXPECTED VS. OBSERVED INNOVATION PERFORMANCE

The bubble chart below shows the relationship between income levels (GDP per capita) and innovation performance (GII score). The trend line gives an indication of the expected innovation performance according to income level. Economies appearing above the trend line are performing better than expected and those below are performing below expectations.

Relative to GDP, Peru's performance is above expectations for its level of development.

The positive relationship between innovation and development

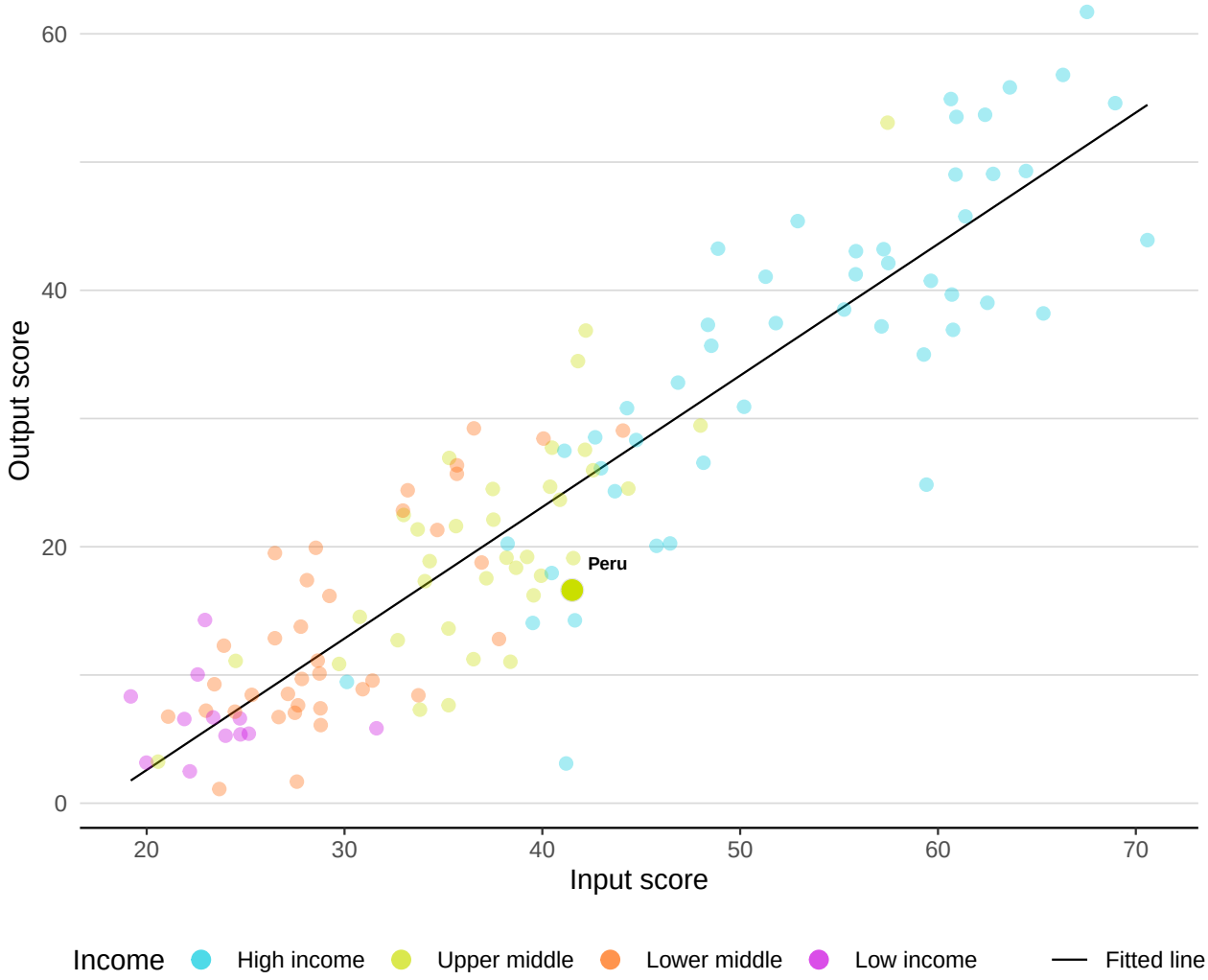


EFFECTIVELY TRANSLATING INNOVATION INVESTMENTS INTO INNOVATION OUTPUTS

The chart below shows the relationship between innovation inputs and innovation outputs. Economies above the line are effectively translating costly innovation investments into more and higher-quality outputs.

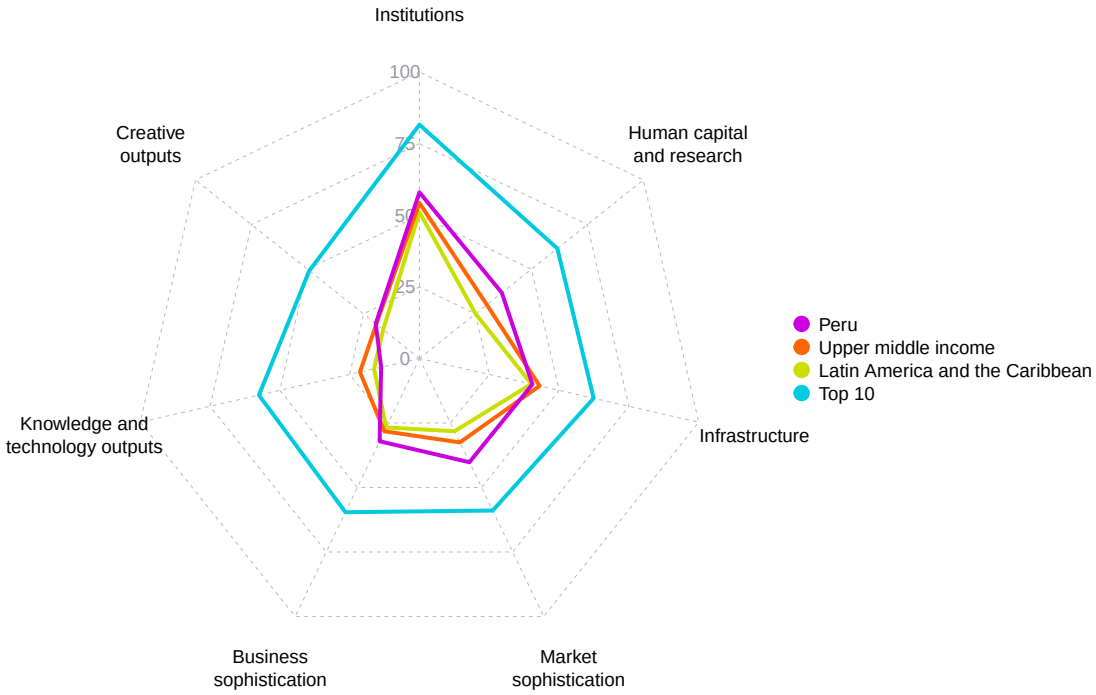
Peru produces less innovation outputs relative to its level of innovation investments.

Innovation input to output performance



BENCHMARKING AGAINST OTHER UPPER MIDDLE-INCOME GROUP ECONOMIES AND LATIN AMERICA AND THE CARIBBEAN

The seven GII pillar scores for Peru



Upper-middle-income group economies

Peru performs above the upper-middle-income group average in five pillars, namely: Institutions; Human capital and research; Market sophistication; Business sophistication; and, Creative outputs.

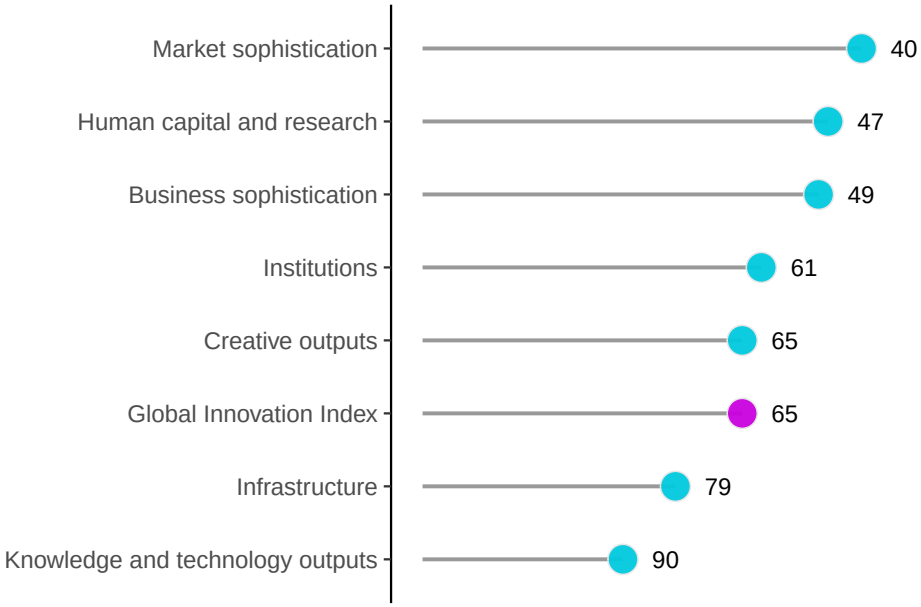
Latin America and the Caribbean

Peru performs above the regional average in six pillars, namely: Institutions; Human capital and research; Infrastructure; Market sophistication; Business sophistication; and, Creative outputs.

OVERVIEW OF RANKINGS IN THE SEVEN GII 2022 AREAS

Peru performs best in Market sophistication and its weakest performance is in Knowledge and technology outputs.

The seven GII pillar ranks for Peru



Note: The highest possible ranking in each pillar is 1.

The full WIPO Intellectual Property Statistics profile for Peru can be found at:

https://www.wipo.int/ipstats/en/statistics/country_profile/profile.jsp?code=PE.

INNOVATION STRENGTHS AND WEAKNESSES

The table below gives an overview of the indicator strengths and weaknesses of Peru in the GII 2022.

Strengths and weaknesses for Peru

Strengths			Weaknesses		
Code	**Indicator name**	**Rank**	**Code**	**Indicator name**	**Rank**
1.2.3	Cost of redundancy dismissal	37	2.1.4	PISA scales in reading, maths and science	66
2.2.1	Tertiary enrolment, % gross	32	2.3.3	Global corporate R&D investors, top 3, mn USD	38
2.2.2	Graduates in science and engineering, %	18	4.2.2	Venture capital investors, deals/bn PPP$ GDP	90
3.3.1	GDP/unit of energy use	23	4.2.3	Venture capital recipients, deals/bn PPP$ GDP	101
4.1.3	Loans from microfinance institutions, % GDP	1	5.2.1	University-industry R&D collaboration	109
4.3.1	Applied tariff rate, weighted avg., %	6	5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP	125
5.1.2	Firms offering formal training, %	6	6.1.4	Scientific and technical articles/bn PPP$ GDP	108
6.1.3	Utility models by origin/bn PPP$ GDP	22	6.3.4	ICT services exports, % total trade	112
7.1.2	Trademarks by origin/bn PPP$ GDP	35	7.1.4	Industrial designs by origin/bn PPP$ GDP	102
7.2.4	Printing and other media, % manufacturing	14	7.2.2	National feature films/mn pop. 15–69	76

GII 2022 rank

Peru

65

Output rank	Input rank	Income	Region	Population (mn)	GDP, PPP$ (bn)	GDP per capita, PPP$
81	52	Upper middle	LCN	33.4	453.7	13,410

			Score/ Value	Rank	
Institutions			**58.0**	**61**	
1.1	**Political environment**		53.2	87	
1.1.1	Political and operational stability*		61.8	87	
1.1.2	Government effectiveness*		44.6	85	
1.2	**Regulatory environment**		70.4	48	
1.2.1	Regulatory quality*		58.1	45	
1.2.2	Rule of law*		37.2	81	
1.2.3	Cost of redundancy dismissal		11.4	37 ●	
1.3	**Business environment**		50.4	56	
1.3.1	Policies for doing business†		46.5	75	
1.3.2	Entrepreneurship policies and culture*	◴	54.4	29	
Human capital and research			**36.8**	**47**	
2.1	**Education**		45.3	80	
2.1.1	Expenditure on education, % GDP		4.2	69	
2.1.2	Government funding/pupil, secondary, % GDP/cap		16.6	74	
2.1.3	School life expectancy, years	◴	15.0	53	
2.1.4	PISA scales in reading, maths and science		401.5	66 ○	
2.1.5	Pupil-teacher ratio, secondary		13.8	63	
2.2	**Tertiary education**		57.2	5 ● ◆	
2.2.1	Tertiary enrolment, % gross	◴	70.7	32 ●	
2.2.2	Graduates in science and engineering, %	◴	29.6	18 ● ◆	
2.2.3	Tertiary inbound mobility, %		n/a	n/a	
2.3	**Research and development (R&D)**		7.8	64	
2.3.1	Researchers, FTE/mn pop.		n/a	n/a	
2.3.2	Gross expenditure on R&D, % GDP		0.2	93	
2.3.3	Global corporate R&D investors, top 3, mn USD		0.0	38 ○ ◇	
2.3.4	QS university ranking, top 3*		18.1	53	
Infrastructure			**40.5**	**79**	
3.1	**Information and communication technologies (ICTs)**		68.1	81	
3.1.1	ICT access*		70.4	98 ◇	
3.1.2	ICT use*		50.5	92	
3.1.3	Government's online service*		75.3	52	
3.1.4	E-participation*		76.2	55	
3.2	**General infrastructure**		21.7	98	
3.2.1	Electricity output, GWh/mn pop.		1,605.4	90	
3.2.2	Logistics performance*		29.8	81	
3.2.3	Gross capital formation, % GDP		21.2	83	
3.3	**Ecological sustainability**		31.6	51	
3.3.1	GDP/unit of energy use		15.4	23 ●	
3.3.2	Environmental performance*		39.8	72	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP		1.9	50	
Market sophistication			**40.2**	**40**	
4.1	**Credit**		51.5	14 ● ◆	
4.1.1	Finance for startups and scaleups*	◴	34.9	49	
4.1.2	Domestic credit to private sector, % GDP		55.1	63	
4.1.3	Loans from microfinance institutions, % GDP		6.9	1 ● ◆	
4.2	**Investment**		4.7	82	
4.2.1	Market capitalization, % GDP		42.8	41	
4.2.2	Venture capital investors, deals/bn PPP$ GDP		0.0	90 ○	
4.2.3	Venture capital recipients, deals/bn PPP$ GDP		0.0	101 ○	
4.2.4	Venture capital received, value, % GDP		0.0	71	
4.3	**Trade, diversification, and market scale**		64.4	31 ●	
4.3.1	Applied tariff rate, weighted avg., %		0.7	6 ● ◆	
4.3.2	Domestic industry diversification		87.5	52	
4.3.3	Domestic market scale, bn PPP$		453.7	47	

			Score/ Value	Rank	
Business sophistication			**32.1**	**49**	
5.1	**Knowledge workers**		46.1	[38]	
5.1.1	Knowledge-intensive employment, %		14.1	91	◇
5.1.2	Firms offering formal training, %	◴	65.9	6 ● ◆	
5.1.3	GERD performed by business, % GDP		n/a	n/a	
5.1.4	GERD financed by business, %		n/a	n/a	
5.1.5	Females employed w/advanced degrees, %		11.3	67	
5.2	**Innovation linkages**		19.4	97	
5.2.1	University-industry R&D collaboration†		32.7	109 ○	◇
5.2.2	State of cluster development and depth†		42.8	88	
5.2.3	GERD financed by abroad, % GDP		n/a	n/a	
5.2.4	Joint venture/strategic alliance deals/bn PPP$ GDP		0.0	125 ○	
5.2.5	Patent families/bn PPP$ GDP		0.0	80	
5.3	**Knowledge absorption**		30.8	62	
5.3.1	Intellectual property payments, % total trade	◴	0.7	59	
5.3.2	High-tech imports, % total trade		10.0	43	
5.3.3	ICT services imports, % total trade	◴	1.6	58	
5.3.4	FDI net inflows, % GDP		2.3	65	
5.3.5	Research talent, % in businesses		n/a	n/a	
Knowledge and technology outputs			**13.7**	**90**	
6.1	**Knowledge creation**		9.7	77	
6.1.1	Patents by origin/bn PPP$ GDP		0.3	88	
6.1.2	PCT patents by origin/bn PPP$ GDP		0.1	67	
6.1.3	Utility models by origin/bn PPP$ GDP		1.0	22 ●	
6.1.4	Scientific and technical articles/bn PPP$ GDP		5.8	108 ○	
6.1.5	Citable documents H-index		14.4	56	
6.2	**Knowledge impact**		22.5	80	
6.2.1	Labor productivity growth, %		0.4	77	
6.2.2	New businesses/th pop. 15–64		3.8	36	
6.2.3	Software spending, % GDP		0.2	57	
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP		4.1	64	
6.2.5	High-tech manufacturing, %		12.6	81	
6.3	**Knowledge diffusion**		8.9	106	◇
6.3.1	Intellectual property receipts, % total trade	◴	0.1	71	
6.3.2	Production and export complexity		23.0	96	◇
6.3.3	High-tech exports, % total trade		0.4	93	
6.3.4	ICT services exports, % total trade	◴	0.3	112 ○	
Creative outputs			**19.5**	**65**	
7.1	**Intangible assets**		31.3	57	
7.1.1	Intangible asset intensity, top 15, %		55.9	46	
7.1.2	Trademarks by origin/bn PPP$ GDP		66.0	35 ●	
7.1.3	Global brand value, top 5,000, % GDP		7.2	63	
7.1.4	Industrial designs by origin/bn PPP$ GDP		0.2	102 ○	
7.2	**Creative goods and services**		12.6	74	
7.2.1	Cultural and creative services exports, % total trade		0.1	84	
7.2.2	National feature films/mn pop. 15–69		0.2	76 ○	◇
7.2.3	Entertainment and media market/th pop. 15–69		7.1	38	
7.2.4	Printing and other media, % manufacturing		2.0	14 ●	
7.2.5	Creative goods exports, % total trade		0.2	74	
7.3	**Online creativity**		2.8	75	
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69		5.1	52	
7.3.2	Country-code TLDs/th pop. 15–69		1.7	73	
7.3.3	GitHub commit pushes received/mn pop. 15–69		3.7	67	
7.3.4	Mobile app creation/bn PPP$ GDP		0.7	78	

NOTES: ● indicates a strength; ○ a weakness; ◆ an income group strength; ◇ an income group weakness; * an index; † a survey question. ◴ indicates that the economy's data are older than the base year; see appendices for details, including the year of the data, at https://www.wipo.int/global_innovation_index/en/2022. Square brackets [ ] indicate that the data minimum coverage (DMC) requirements were not met at the sub-pillar or pillar level.

DATA AVAILABILITY

The following tables list indicators that are either missing or outdated for Peru.

Missing data for Peru

Code	Indicator name	Economy year	Model year	Source
2.2.3	Tertiary inbound mobility, %	n/a	2019	UNESCO Institute for Statistics
2.3.1	Researchers, FTE/mn pop.	n/a	2020	UNESCO Institute for Statistics
5.1.3	GERD performed by business, % GDP	n/a	2020	UNESCO Institute for Statistics
5.1.4	GERD financed by business, %	n/a	2019	UNESCO Institute for Statistics
5.2.3	GERD financed by abroad, % GDP	n/a	2019	UNESCO Institute for Statistics
5.3.5	Research talent, % in businesses	n/a	2020	UNESCO Institute for Statistics

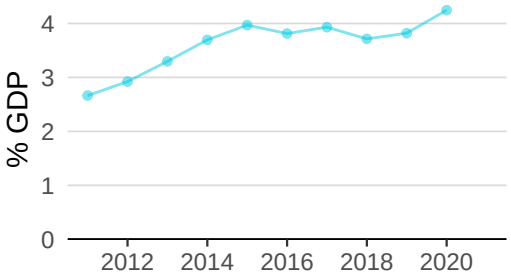
Outdated data for Peru

Code	Indicator name	Economy year	Model year	Source
1.3.2	Entrepreneurship policies and culture	2018	2021	Global Entrepreneurship Monitor
2.1.3	School life expectancy, years	2017	2019	UNESCO Institute for Statistics
2.2.1	Tertiary enrolment, % gross	2017	2019	UNESCO Institute for Statistics
2.2.2	Graduates in science and engineering, %	2017	2020	UNESCO Institute for Statistics
4.1.1	Finance for startups and scaleups	2018	2021	Global Entrepreneurship Monitor
5.1.2	Firms offering formal training, %	2017	2019	World Bank Enterprise Surveys
5.3.1	Intellectual property payments, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development
5.3.3	ICT services imports, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development
6.3.1	Intellectual property receipts, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development
6.3.4	ICT services exports, % total trade	2019	2020	World Trade Organization and United Nations Conference on Trade and Development

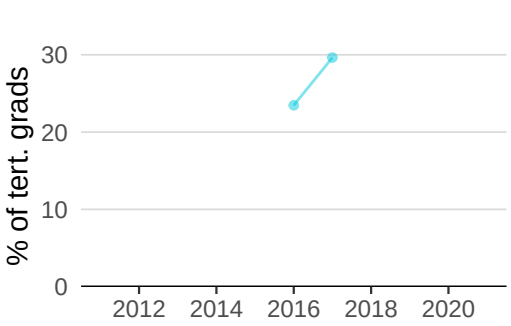
PERU'S INNOVATION SYSTEM

As far as practicable, the plots below present unscaled indicator data.

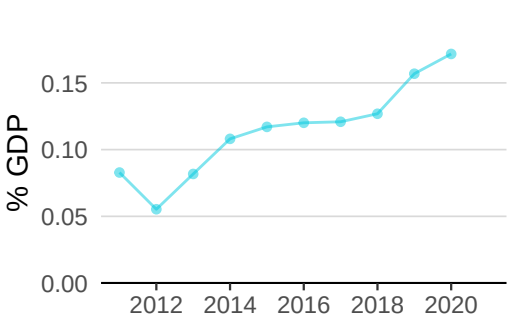
Innovation inputs



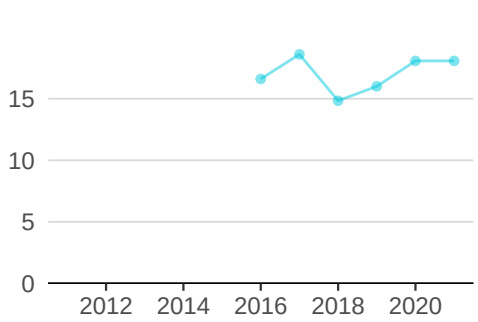
2.1.1 Expenditure on education was equal to 4.2% GDP in 2020–up by 11 percentage points from the year prior–and equivalent to an indicator rank of 69.



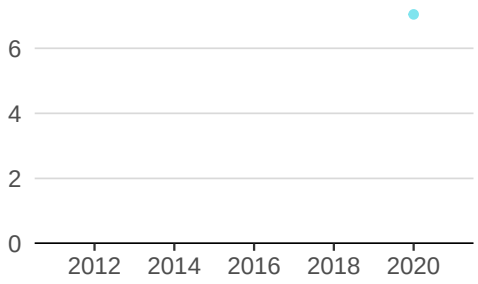
2.2.2 Graduates in science and engineering was equal to 29.6% of tert. grads in 2017–up by 26 percentage points from the year prior–and equivalent to an indicator rank of 18.



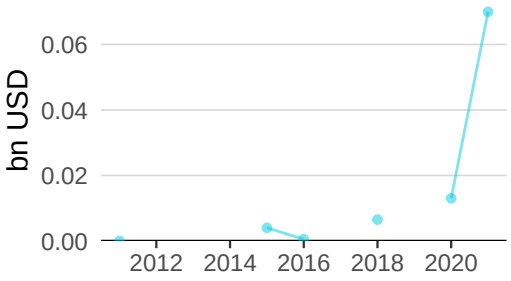
2.3.2 Gross expenditure on R&D was equal to 0.2% GDP in 2020–up by 9 percentage points from the year prior–and equivalent to an indicator rank of 93.



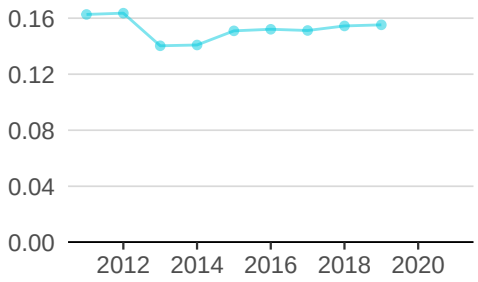
2.3.4 QS university ranking was equal to 18.1 in 2021–effectively unchanged from the year prior–and equivalent to an indicator rank of 53.



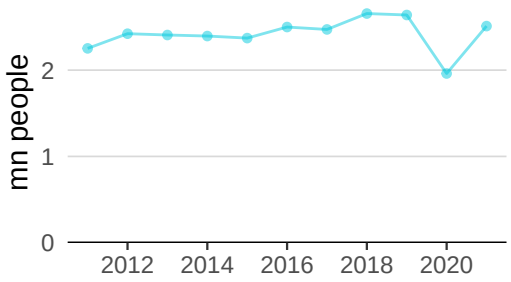
3.1.1 ICT access was equal to 7.0 in 2020 and equivalent to an indicator rank of 98.



4.2.4 Venture capital received was equal to 0.1 bn USD in 2021–up by 438 percentage points from the year prior–and equivalent to an indicator rank of 71.

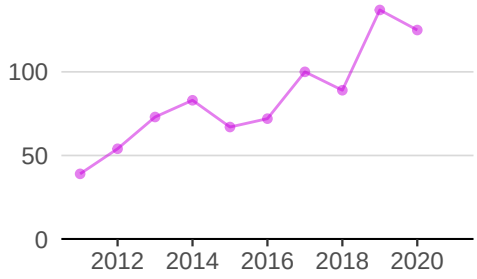


4.3.2 Domestic industry diversification was equal to 0.2 in 2019–up by 1 percentage point from the year prior–and equivalent to an indicator rank of 52.

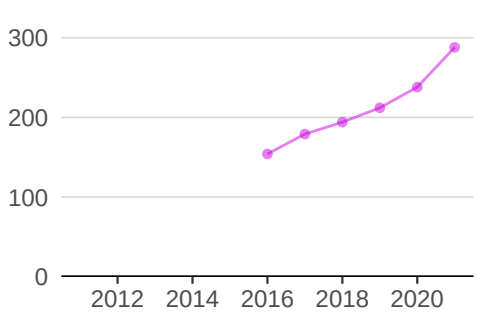


5.1.1 Knowledge-intensive employment was equal to 2.5 mn people in 2021–up by 28 percentage points from the year prior–and equivalent to an indicator rank of 91.

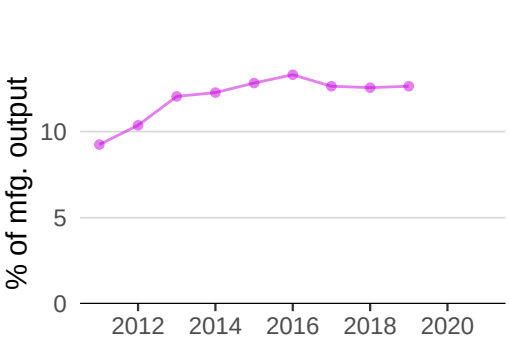
Innovation outputs



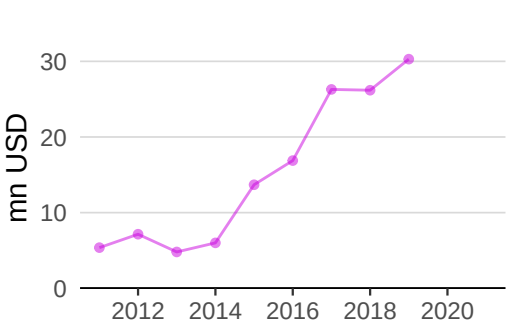
6.1.1 Patents by origin was equal to 125.0 in 2020–down by 9 percentage points from the year prior–and equivalent to an indicator rank of 88.



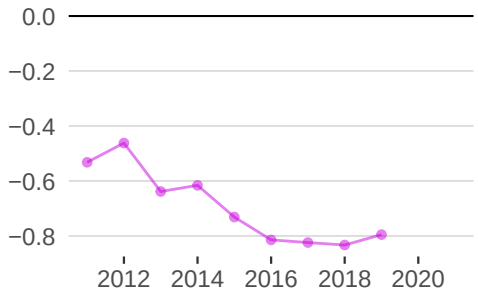
6.1.5 Citable documents H-index was equal to 288.0 in 2021–up by 21 percentage points from the year prior–and equivalent to an indicator rank of 56.



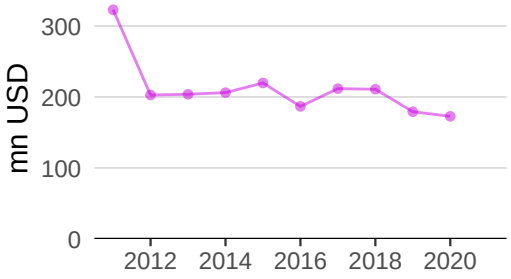
6.2.5 High-tech manufacturing was equal to 12.6% of mfg. output in 2019–up by 1 percentage point from the year prior–and equivalent to an indicator rank of 81.



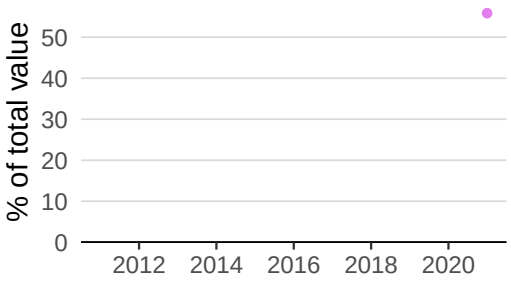
6.3.1 Intellectual property receipts was equal to 30.3 mn USD in 2019–up by 16 percentage points from the year prior–and equivalent to an indicator rank of 71.



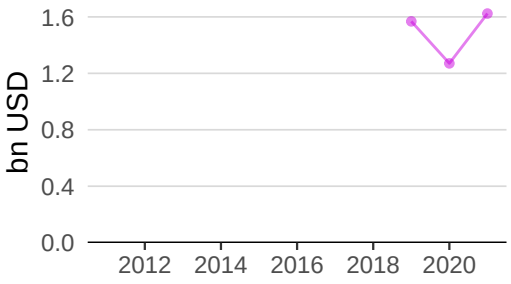
6.3.2 Production and export complexity was equal to -0.8 in 2019–up by 5 percentage points from the year prior–and equivalent to an indicator rank of 96.



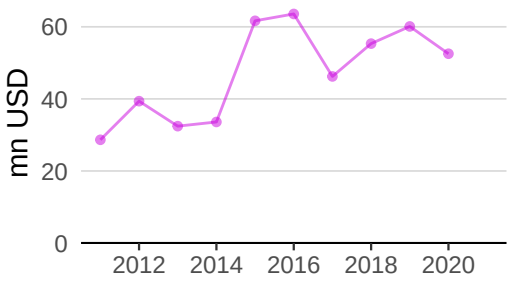
6.3.3 High-tech exports was equal to 172.7 mn USD in 2020–down by 4 percentage points from the year prior–and equivalent to an indicator rank of 93.



7.1.1 Intangible asset intensity was equal to 55.9% of total value in 2021 and equivalent to an indicator rank of 46.



7.1.3 Global brand value was equal to 1.6 bn USD in 2021–up by 28 percentage points from the year prior–and equivalent to an indicator rank of 63.



7.2.1 Cultural and creative services exports was equal to 52.5 mn USD in 2020–down by 13 percentage points from the year prior–and equivalent to an indicator rank of 84.

PERU'S INNOVATION TOP PERFORMERS

2.3.3 Global corporate R&D investors

Firm	Industry	R&D	R&D Growth	R&D Intensity	Rank

No observations

Source: European Commission's Joint Research Centre (https://iri.jrc.ec.europa.eu/scoreboard/2021-eu-industrial-rd-investment-scoreboard).

2.3.4 QS university ranking

University	Score	Rank
PONTIFICIA UNIVERSIDAD CATÓLICA DEL PERÚ	26.4	395=
UNIVERSIDAD PERUANA CAYETANO HEREDIA	16.2	651-700
UNIVERSIDAD NACIONAL MAYOR DE SAN MARCOS	11.6	801-1000

Source: QS Quacquarelli Symonds Ltd (https://www.topuniversities.com/university-rankings/world-university-rankings/2022).
Note: QS Quacquarelli Symonds Ltd annually assesses over 1,200 universities across the globe and scores them between [0,100]. Ranks can represent a single value "x", a tie "x=" or a range "x-y".

7.1.1 Intangible asset intensity, top 15

Firm	Rank
CREDICORP	1
INRETAIL PERU	2
INTERBANK	3

Source: Brand Finance (https://brandirectory.com/reports/gift-2021).
Note: Brand Finance only provides within economy ranks.

7.1.3 Global brand value, top 5,000

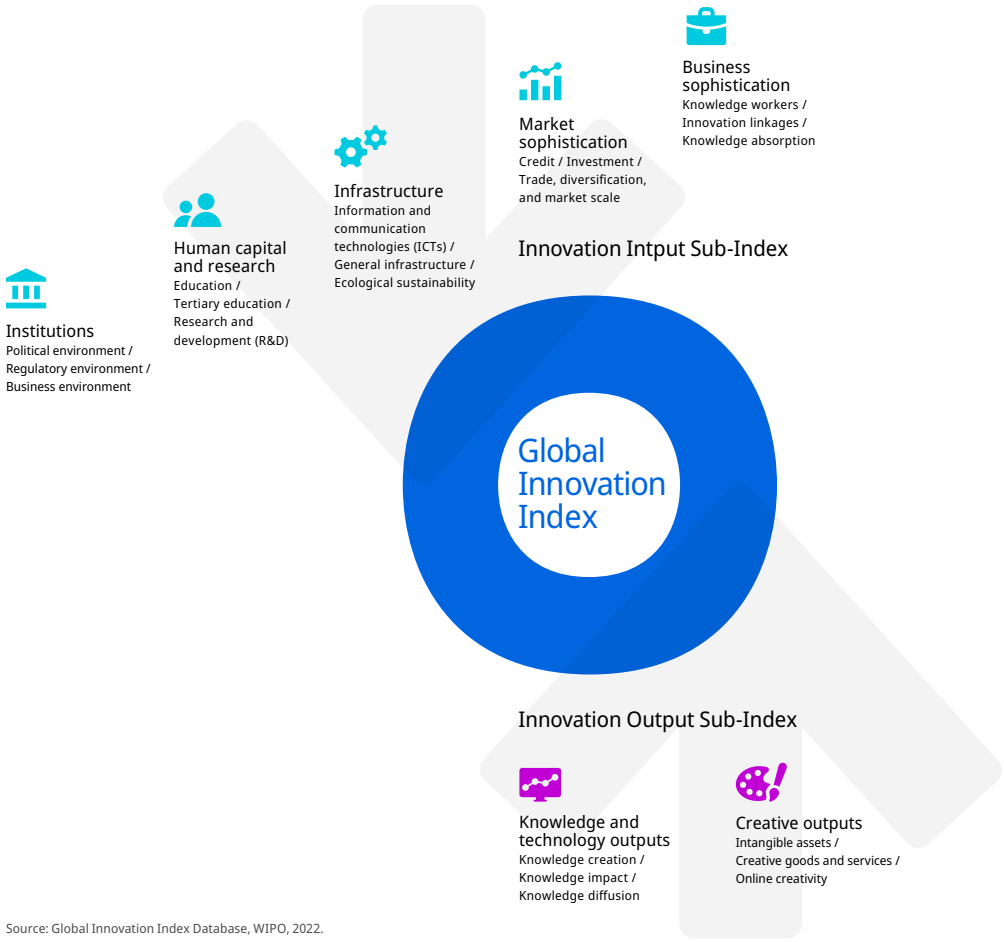
Brand	Industry	Rank
SCC	Mining, Iron & Steel	1
BCP	Banking	2
INTERBANK	Banking	3

Source: Brand Finance (https://brandirectory.com).
Note: Rank corresponds to within economy ranks.

ABOUT THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) is published by the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations.

Recognizing that innovation is a key driver of economic development, the GII aims to provide an innovation ranking and rich analysis referencing around 130 economies. Over the last decade, the GII has established itself as both a leading reference on innovation and a “tool for action” for economies that incorporate the GII into their innovation agendas.



Source: Global Innovation Index Database, WIPO, 2022.

The Index is a ranking of the innovation capabilities and results of world economies. It measures innovation based on criteria that include institutions, human capital and research, infrastructure, credit, investment, linkages; the creation, absorption and diffusion of knowledge; and creative outputs.

The GII has two sub-indices: the Innovation Input Sub-Index and the Innovation Output Sub-Index, and seven pillars, each consisting of three sub-pillars.